CLAIMS

1   1. A method for concealing errors detected in an input audio bit stream, the digital

2   audio bit stream configured as a series of packets, said method comprising the steps

3   of:

4   detecting a first beat and a subsequent plurality of beats in the audio bit stream;

5   defining a first inter-beat interval extending between said first beat and a $(k+1)^{th}$

6   subsequent beat;

7   storing at least a portion of the audio bit stream occurring within said first inter-

8   beat interval;

9   detecting an erroneous audio segment occurring in a second inter-beat interval

10   extending between said $(k+1)^{th}$ beat and a $(2k+1)^{th}$ subsequent beat; and

11   replacing at least a first part of said erroneous audio segment with a

12   corresponding part of said stored digital audio bit stream portion.

1   2.   A method as in claim 1 wherein 'k' is an integer greater than or equal to 2.

1   3.   A method as in claim 1 wherein said stored audio bit stream portion includes

2   at least one packet positioned on at least one said beat.

1   4.   A method as in claim 1 wherein said step of detecting a first beat comprises a

2   step of computing the variance of the audio bit stream using decoded IMDCT

3   coefficients.

1   5.   A method as in claim 1 wherein said step of detecting a first beat comprises

2   the step of utilizing a window-switching pattern.

1   6.   A method as in claim 1 wherein said step of detecting a first beat comprises a

2   step of computing the envelope of the audio bit stream using decoded IMDCT

3   coefficients.

1   7.   A method as in claim 1 wherein said step of detecting a first beat comprises

2   the steps of computing the variance of the audio bit stream using decoded IMDCT

3   coefficients and utilizing a window-switching pattern.

1   8.   A method as in claim 1 wherein said step of storing at least a portion of the

2   audio bit stream includes a step of storing said portion in a circular first-in first-out

3   (FIFO) buffer.

1   9.   A method for error concealment in a process of digital audio streaming, said

2   method comprising the steps of:

3   providing a bitstream;

4   detecting at least two beats extracted from said bitstream, said beats extracted

5   from a signal having repetitive sequences; and

6   determining an inter-beat interval between said at least two beats.

1   10.   A method as in claim 9 wherein said signal having repetitive sequences

2   comprises at least one signal from the group consisting of a music signal and an audio

3   signal.

1   11.   A method as in claim 9 wherein said signal having repetitive sequences

2   includes an error pattern.

1   12.   A method as in claim 9 wherein said signal having repetitive sequences

2   includes a packet loss from an IP network and a burst error from a wireless channel.

1   13.   A method as in claim 9 further comprising the step of decoding at least a

2   portion of said signal having repetitive sequences.

1   14.   A method as in claim 9 wherein said signal having repetitive sequences

2   comprises at least one element from the group consisting of a rhythm element, a beat

3   element, and a bar element.

1   15.   A method as in claim 11 further comprising the step of replacing said error

2   pattern with music content.

1   16.   A method as in claim 9 further comprising the step of replacing one said beat

2   with another said beat from a preceding bar.

1   17.   A method for error concealment in a process of digital audio streaming in a

2   wireless terminal, said method comprising the step of storing two consecutive inter-

3   beat intervals of the compressed audio bitstream

1   18.   A memory for error concealment in a process of digital audio streaming in a

2   wireless terminal, said memory comprising:

3   storing means for storing a signal history of musical beats of two consecutive

4   inter-beat intervals of the compressed audio bitstream.